HAV Exposure Points System & Ready Reckoner



The table below is a 'ready reckoner' for calculating daily vibration exposures. All you need is the vibration magnitude (level) and exposure time. The ready-reckoner covers a range of vibration magnitudes up to 40 m/s2 and a range of exposure times up to 10 hours.

The exposures for different combinations of vibration magnitude and exposure time are given in exposure points instead of values in m/s2 A(8). You may find the exposure points easier to work with than the A(8) values:

- exposure points change simply with time: twice the exposure time, twice the number of points;
- exposure points can be added together, for example where a worker is exposed to two or more different sources of vibration in a day;
- the exposure action value (2.5 m/s2 A(8)) is equal to 100 points;
- the exposure limit value (5 m/s2 A(8)) is equal to 400 points;

				1										
	40	265	600			Above exposure limit value								
	30	150	450	900		ī				Likely to be at or above limit value				
	25	105	315	625	1250					Above exposure action value				
Vibration magnitude m/s ²	20	67	200	400	800	1200				value	Likely to be at or above action value			
	19	60	180	360	720	1100	1450			Below expo	sure action v	alue		
	18	54	160	325	650	970	1300							
	17	48	145	290	580	865	1150							
	16	43	130	255	210	770	1000							
	15	38	115	225	450	675	900	1350						
	14	33	98	195	390	590	785	1200						
	13	28	85	170	340	505	675	1000	1350					
	12	24	72	145	290	430	575	865	1150	1450		-		
	11	20	81	120	240	365	485	725	970	1200	1450			
	10	17	50	100	200	300	400	600	800	1000	1200			
	9	14	41	81	160	245	325	485	650	810	970			
	8	11	32	64	130	190	255	385	500	640	770			
	7	8	25	49	98	145	195	295	390	490	590			
	6	6	18	38	72	110	145	215	290	360	430			
	5.5	5	15	31	61	91	120	100	240	305	385			
	5	4	15	25	50	70	100	150	200	250	300			
	4.5	3	10	21	41	61	81	120	160	205	245			
	4	3	8	16	32	48	64	95	130	160	190			
	3.5	2	6	13	25	37	49	74	98	125	145			
	3	2	5	9	15	27	36	56	72	90	110			
	2.5	1	3	6	13	19	25	38	50	63	75			
	2	1	2	4	8	12	18	24	32	40	48			
	1.5	0	1	2	5	7	9	14	18	2 3	27			
	1	0	1	1	2	3	4	6	8	10	12			
						1 h 30								
		5 min	15 min	30 min	1 h	min	2 h	3 h	4 h	5 h	6 h			
					_		_							

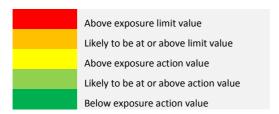
Exposure time T

Source: UK Health and Safety Executive.

Using the ready reckoner

- 1. Find the vibration magnitude (level) for the tool or process (or the nearest value) on the grey scale on the left of the table.
- 2. Find the exposure time (or the nearest value) on the grey scale across the bottom of the table.
- 3. Find the value in the table that lines up with the magnitude and time. The illustration shows how it works for a magnitude of 5 m/s2 and an exposure time of 3 hours: in this case the exposure corresponds to 150 points.
- 4. Compare the points value with the exposure action and limit values (100 and 400 points respectively). In this example the score of 150 points lies above the exposure action value.

The colour of the square containing the exposure points value tells you whether the exposure exceeds, or is likely to exceed, the exposure action or limit value:



5. If a worker is exposed to more than one tool or process during the day, repeat steps 1-3 for each one, add the points, and compare the total with the exposure action value (100) and the exposure limit value (400).

Note – Points Formulas

These formulas can be used to calculate the points values without the need for the ready reckoner table above.

$$Points(n) = \left(\frac{A(8)}{2.5}\right)^2 \times 100$$

Or...

$$Points(n) = \left(\frac{a_{hw}}{2.5}\right)^2 \times \frac{t}{8} \times 100$$

Where

A(8) is the daily exposure in m/s2

Ahw is the measured vibration level

t is the exposure time in hours